

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
25 October 2001 (25.10.2001)

PCT

(10) International Publication Number  
**WO 01/79164 A3**

- (51) International Patent Classification<sup>7</sup>: **A61K 45/06**
- (21) International Application Number: **PCT/US01/09037**
- (22) International Filing Date: **21 March 2001 (21.03.2001)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:  
**60/190,790**      **21 March 2000 (21.03.2000)**      **US**
- (71) Applicant (for all designated States except US):  
**ATHEROGENICS, INC.** [US/US]; 8995 Westside  
Parkway, Alpharetta, GA 30004 (US).
- (74) Agent: **KNOWLES, Sherry, M.**: King & Spalding, 191  
Peachtree Street, Atlanta, GA 30303-1763 (US).
- (81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.**
- (84) Designated States (regional): **ARIPO** patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW). **Eurasian** patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM). **European** patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR). **OAPI** patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— with international search report
- (88) Date of publication of the international search report:  
**23 May 2002**
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **MEDFORD, Russell, M.** [US/US]; 7935 Fawndale Way, Atlanta, GA 30350 (US). **SAXENA, Uday** [IN/US]; 2900 Galahad Drive, Atlanta, GA 30034 (US). **HOONG, Lee, K.** [MY/US]; 220 Gaines Oak Way, Suwanee, GA 30024 (US). **SOMERS, Patricia, K.** [US/US]; 201 Yale Way, Fort Collins, CO 80525 (US).



**WO 01/79164 A3**

(54) Title: **N-SUBSTITUTED DITHIOCARBAMATES FOR THE TREATMENT OF BIOLOGICAL DISORDERS**

(57) Abstract: Methods and compositions for the treatment of proliferative cell diseases, such as cancer, are provided, using N-substituted dithiocarbamates.

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/09037

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 A61K45/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, BIOSIS, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|----------|---|-----------------------|
| A        | WO 95 30415 A (EMORY UNIVERSITY)<br>16 November 1995 (1995-11-16)<br>cited in the application<br>claims 1,7,17<br>page 32, line 25 -page 33, line 17<br>page 34, line 27-37<br>page 35, line 16 -page 37, line 30 | 1-3,5                 |
| A        | US 5 294 430 A (R.F.BORCH, T.K.SCHMALBACH)<br>15 March 1994 (1994-03-15)<br>cited in the application<br>claims 1,7,8  | 1-4                   |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

28 January 2002

Date of mailing of the international search report

04/02/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040. Tx. 31 651 epo nl.  
Fax: (+31-70) 340-3016

Authorized officer

Peeters, J

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

## Continuation of Box I.2

Present claims 6-130 relate to an extremely large number of possible compounds/products/methods. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds/products/methods claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compounds/products/methods described in the example 3-6 and 8.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Internal Application No

PCT/US 01/09037

| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---|---------------------|----------------------------|---------------------|
| WO 9530415                                | A | 16-11-1995          | US 5807884 A               | 15-09-1998          |
|   |   |                     | AU 709939 B2               | 09-09-1999          |
|   |   |                     | AU 2586095 A               | 29-11-1995          |
|   |   |                     | BG 101030 A                | 30-09-1997          |
|   |   |                     | BR 9507716 A               | 23-09-1997          |
|   |   |                     | CA 2189336 A1              | 16-11-1995          |
|   |   |                     | CN 1152869 A               | 25-06-1997          |
|   |   |                     | CZ 9603308 A3              | 15-07-1998          |
|   |   |                     | EP 0759752 A1              | 05-03-1997          |
|   |   |                     | HU 76728 A2                | 28-11-1997          |
|   |   |                     | JP 3120091 B2              | 25-12-2000          |
|   |   |                     | JP 10500111 T              | 06-01-1998          |
|   |   |                     | NO 964742 A                | 08-11-1996          |
|   |   |                     | PL 317193 A1               | 17-03-1997          |
|   |   |                     | SK 136496 A3               | 11-01-1999          |
|   |   |                     | WO 9530415 A1              | 16-11-1995          |
|   |   |                     | US 5846959 A               | 08-12-1998          |
|   |   |                     | US 5773231 A               | 30-06-1998          |
|   |   |                     | US 5750351 A               | 12-05-1998          |
|   |   |                     | US 5783596 A               | 21-07-1998          |
|   |   |                     | US 5811449 A               | 22-09-1998          |
|   |   |                     | US 5773209 A               | 30-06-1998          |
|   |   |                     | US 5821260 A               | 13-10-1998          |
| US 5294430                                | A | 15-03-1994          | US 4938949 A               | 03-07-1990          |
|   |   |                     | US 5035878 A               | 30-07-1991          |
|   |   |                     | AT 119771 T                | 15-04-1995          |
|   |   |                     | AU 623184 B2               | 07-05-1992          |
|   |   |                     | AU 4335589 A               | 02-04-1990          |
|   |   |                     | DE 68921760 D1             | 20-04-1995          |
|   |   |                     | DK 44791 A                 | 10-05-1991          |
|   |   |                     | EP 0433393 A1              | 26-06-1991          |
|   |   |                     | JP 4500676 T               | 06-02-1992          |
|   |   |                     | NZ 230622 A                | 25-09-1991          |
|   |   |                     | WO 9002550 A1              | 22-03-1990          |
|   |   |                     | US 5169765 A               | 08-12-1992          |
|   |   |                     | US 5187193 A               | 16-02-1993          |
|   |   |                     | AU 6647190 A               | 16-05-1991          |
|   |   |                     | NZ 235673 A                | 26-03-1993          |
|   |   |                     | WO 9105571 A1              | 02-05-1991          |
|   |   |                     | US 5463392 A               | 31-10-1995          |